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Fuels Planning: Science Synthesis and Integration

Economic Uses Fact Sheet: 6

Selection Criteria Analysis



Pacific Northwest
Research Station



Synthesizing Scientific Information for Fire and Fuels Project Managers

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Fuels planning: Science synthesis and integration, an interagency research/management partnership to support the Ten-Year Fire Plan, led by Russell T. Graham, RMRS, and Sarah M. McCaffrey, NCRS.

What Are Other Managers Doing?



Confidence in decisionmaking can often come from knowing if others in similar circumstances would choose the same management strategy. Given particular conditions, have other fuel planners applied mechanical or prescribed fire treatments? Researchers at the Pacific Northwest (PNW) Research Station (USDA Forest Service) and the University of Sas-

katchewan have developed a Selection Criteria Analysis for answering this very question. Selection Criteria Analysis does not necessarily indicate which treatment type is best for your particular situation. Rather, the analysis provides useful insights about what variables have influenced other managers in their selection of treatment type based on a number of site-specific characteristics and management objectives.

The information for the analysis comes from the FASTRACS (Fuel Analysis, Smoke Tracking, and Report Access Computer System) program of the Pacific Northwest Region of the USDA Forest Service, drawing on cases from Oregon and Washington during 2000 to 2002—after implementation of the National Fire Plan. As in all decisionmaking, the choice of management activity should reflect the unique factors of your situation. The more similar your site is to those from the FASTRACS database, the more relevant the comparison will be.

Factors Affecting Choice of Treatment

The fire regime, topography, and management objective are all factors that significantly affect the likelihood that managers use prescribed fire or mechanical treatments. In many cases the decision of whether or not to use fire may be obvious—on steep slopes in high-severity fire regimes, for example. But what if the answer is not so obvious, and different factors point toward the use of conflicting strategies? The Selection Criteria Analysis provides useful information about how these factors weigh into previous manager decisions.

- **Site characteristics:** The use of prescribed fire is typically less common in fire regime II—grass and mountain shrub communities having frequent, stand-replacing fires—than in fire regimes I and III. Prescribed fire is used less frequently in moist forest types having low-frequency, high-severity fire regimes. Slope and elevation are important variables for selecting treatment type. Fire is less likely to be used at high elevations and on steeper slopes.

Prescribed fire is more difficult to contain on steeper slopes, while conditions at higher elevation sites may be less conducive to prescribed burning due to longer fire return intervals and the resulting increased risk of crown fires.

- **Management objective:** According to cases in the FASTRACS database, prescribed fire is more likely to be used when management goals are to achieve defensible space objectives, fuel reduction objectives, and municipal watershed objectives; whereas mechanical treatments are more likely to be used for watershed improvement objectives. It is important to remember that Selection Criteria Analysis does not indicate which strategies are optimal for each management objective; rather, the analysis indicates which treatment managers have chosen in past situations.

Balancing the Factors

In some cases, the management decision is clear. In many cases, however, the above factors can point toward the use of opposing strategies. For example, what method have other managers chosen when their sites are relatively flat and low elevation (pointing toward the use of prescribed fire) but the management objective is watershed improvement (pointing toward the past use of mechanical treatments)? Selection Criteria Analysis weighs the individual factors to provide insights on past decisions by managers.

Selected References

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Economics Team Fact Sheets

Look for fact sheet topics from the Economics Team including prescribed fire costs, harvesting, log hauling, NEPA and other regulations, wood utilization, economic impacts on communities, markets for wood, and harvest equipment requirements.

Fuels Planning: Synthesis and Integration

This fact sheet is one in a series being produced as part of a larger project supported by the USDA Forest Service to synthesize new knowledge and information relevant to fire and fuels management. Fact sheets address topics related to stand structure, environmental impacts, economics, and human responses to these factors. Information in the fact sheets is targeted for the dry forests of the Inland West, but is often applicable across broad regions of the country. For more information, please visit our Web site at:

www.fs.fed.us/fire/tech_transfer/synthesis/synthesis_index

The Fuels Planning fact sheets are based on preliminary findings. Information from fact sheets will be synthesized in an upcoming publication.